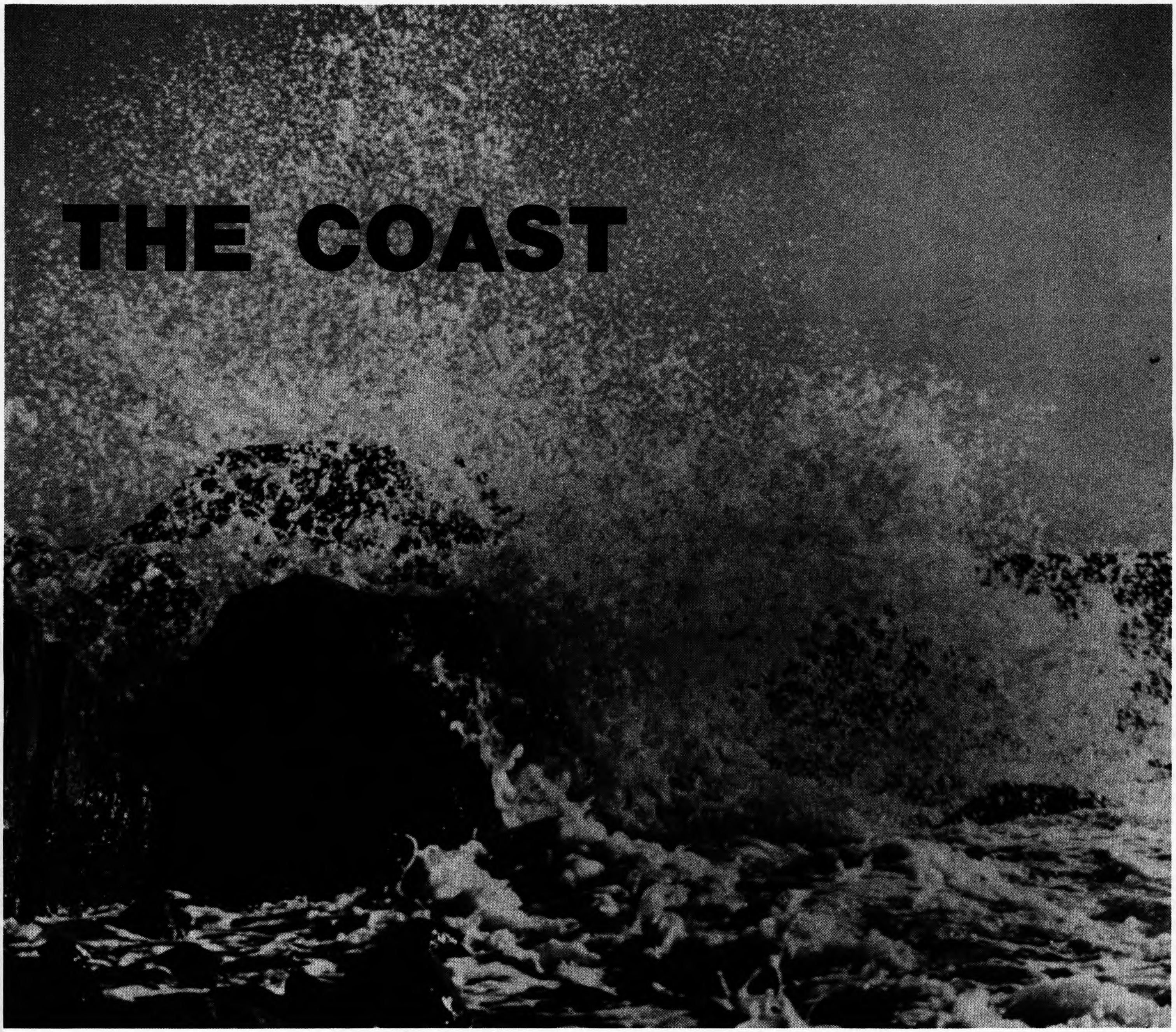
Connecticut Department of Environmental Protection

citizens' bulletin

Volume 3 Number 11 July/August, 1976 $2 per year



A Special Issue

The Connecticut Coast............2
Facts About the Sound............3
Six Views on the Coast...........4
From the Field..................10
PEP Talk.......................11
Restoring Fairfield's Marsh.....12
Trailside Botanizing............13
DEP Calendar....................15

A Special Issue:

The Connecticut Coast

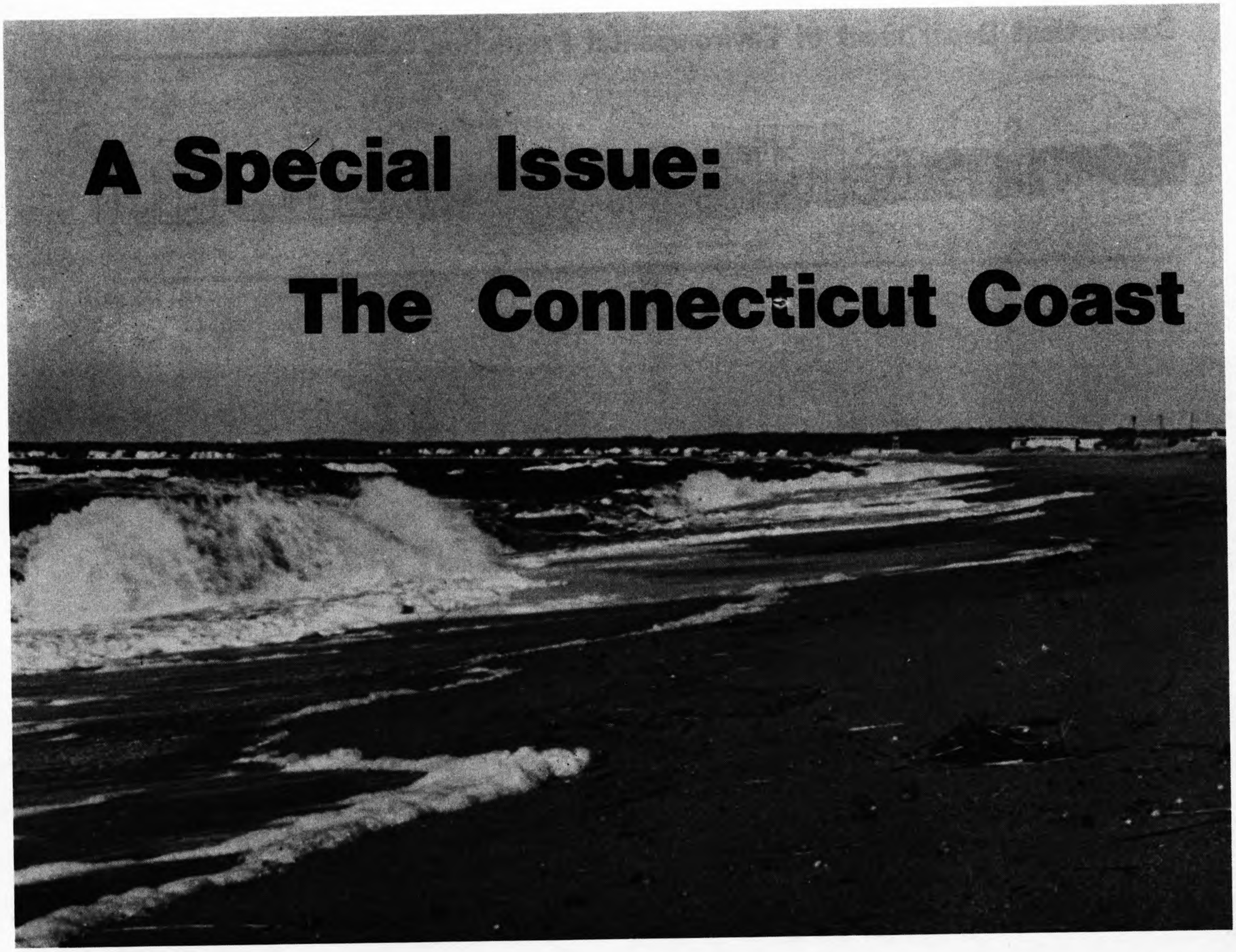


photo: Dick Clifford, DEP Parks and Recreation

The coast is a sensitive area, both environmentally and politically. It is the site of biological and physical cycles. Its estuaries and marshes support the young of most finfish and shellfish and host complex ecosystems important to life in the sea. Its beaches and wetlands disperse the energy of storm waves. It is the site of global physical cycles in which waves and storms erode the land while rivers and streams deposit silt from inland areas.

It is also an area of conflicting interests. Is our coast more valuable as a port, industrial site, scenic attraction, wildlife habitat or housing area? Who should determine its uses--economic interests, local communities or the state and federal governments? Who is best qualified to decide?

To address some of these problems, this month we are bringing you a special coastal edition of the Citizens' Bulletin. Each article in this issue discusses some aspect of the state's coastal resources. We have also included a special supplement prepared by the Connecticut Coastal Area Management Program staff, updating that program's activities.

The Connecticut Coastal Area Management Program is a statewide planning effort to consider the variety of interests and develop a sensible management plan for the coast. Prominent among its activities will be a series of public meetings held in coastal towns this fall. Designed to gain public input into what the coastal management plan should be, the meetings will be announced in local newspapers. We hope this special issue of the Bulletin will provide you with useful information concerning the coast, and that when the meetings come to your area, you will participate.

To receive additional copies of this month's insert "Land's End" or for additional information about Connecticut's Coastal Area Management Program write:

Coastal Area Management Program
Dept. of Environmental Protection
71 Capitol Avenue
Hartford, Connecticut 06115

Our Coastal Resource:

Facts About the Sound

No one will deny that the coast is valuable. What is particularly significant about Connecticut's coast is its wide diversity of value. The following facts should provide you with some idea of what is taking place on the coast and, where trends exist, where they are heading.

As a site for residential and commercial development the coast is an important economic resource. Of roughly 250 miles of coastline, more than 90 have been developed for residential, commercial or industrial use. Average density there is nearly three times greater than in inland areas, with one out of every ten Connecticut residents living in our 36 coastal communities. The Sound is also vital for industrial development and marine commerce. Much of Connecticut's electric power is generated on the Sound's edge and nearly all of the state's refined petroleum products are shipped to us over the Sound.

At the same time, the coast possesses significant natural resources that we must recognize and protect. The importance of our wetlands is widely accepted: they remove impurities caused by pollution, buffer storms, and provide essential spawning, nursery and feeding grounds for fish and wildlife. It is estimated that two-thirds of the ocean's finfish and shellfish spend part of their life cycles in tidal wetlands. We also have more than 400 species of birds along the shore and 100 species of fish in the Sound.

Many of these resources are now in trouble. Little more than half the tidal wetlands we once had still exist today (15,500 acres remain). Commercial fishing, once extensive in Long Island Sound, has shown a steady decline since the mid-1950's. The State of Connecticut leases only about one-fourth of the shellfish beds it used to lease. Contaminated by pollution, many acres have been closed to protect the public's health.

The coast plays an important recreational role. Long Island Sound harbors one of the largest fleets of recreational boats in the world: more than 68,000 registered motorboats and 30,000 sailboats in Connecticut alone. We have over 185 marinas and at least 65 yacht clubs. Connecticut's saltwater anglers numbered more than 341,000 in 1970, representing more than 10% of the state's entire population.

More than anything else, the coast means "the beach" to the state's three million residents. But we are poorly equipped to provide for them. The last major beach acquisition by the state was in the 1930's. Since then Connecticut's population has nearly doubled.

Of the 72 beach miles along the coast only six are state-owned (the rest are private or municipally-owned), and only four of the state's six miles are conveniently usable. The other two miles include one mile of beach at Silver Sands State Park, closed because of pollution from a nearby landfill; and one mile of preserved area in Bluff Point, three miles from the nearest parking.

The coast is not without its own natural hazards. The 1938 hurricane cost Connecticut and Rhode Island 250 lives and $125 million in damages. There is also a critical daily erosion problem that exists along Connecticut's shore. One-eighth of our coastline is receding at a rate of one to three feet per year. Damage from this erosion is estimated to cost Connecticut residents from $2 to $3 million per year, mostly in lost land values.

Since the 1938 hurricane, state legislation has been enacted to regulate certain coastal resources. Local communities also regulate the coastline through their own zoning designations. Many of the present regulatory programs overlap, such as in towns where state-regulated tidal wetlands are zoned industrial. For a single project to be built in the coastal zone between 12 and 15 permits are required from various federal, state and local authorities.

Meanwhile, development pressures continue. Twenty-eight per cent of the coast is completely developed, with further growth a certainty. The fastest growing area of the coast is the Southwest, where 50% of that region's development has taken place in the last ten years. If this rate were to continue, the entire Southeastern corner of our coast would be fully developed in twenty years.

Connecticut's Coastal Area Management Program (CAM) is intended to solve some of these problems of unplanned or illegal

(continued on page 11)

What should we do?

Six Views on the Problems and Prospects of the Coast

Every interest group has its own ideas on how best to manage the coast. To sample some of these ideas, we interviewed six prominent Connecticut residents with specific interests there. Representing a diversity of attitudes, they include a naturalist, a developer, a marina operator, two commercial shell fishermen, and a coastal town official. Geographically they represent every section of the shore from New York to Rhode Island.

All six of the people we interviewed shared a belief that some form of coastal planning is necessary, but differed on what they thought the plan should emphasize. All agreed that to be workable, any management plan should provide for a variety of uses on the coast.

The comments printed here were taken from several hours of interviews. While not a compilation of all the individuals' remarks, they should given an indication of the opinions of each.

NATURALIST: Roland Clement, Vice President of the National Audubon Society

The biological need for preserving the coast is obvious. The sea is home to important finfish and shellfish, most of which spend part of their life cycles in estuaries or coastal marshes. Tidal wetlands host complex ecosystems supporting fur bearing animals and bird life.

Roland Clement is well qualified to speak for the naturalist's point of view. Internationally recognized, he became Vice President of the National Audubon Society in 1966. He is Chairman of the U. S. Section of the International Council for Bird Preservation and Secretary for the Americas on the Council. Published in numerous scientific periodicals, Clement has lectured at universities and symposia in this country and abroad, written editorials for Audubon magazine, authored three books, edited two and contributed to five. He is also chairman of the CAM Citizens' Advisory Board and serves on the Norwalk Conservation Commission.

Clement emphasizes the human aspect of environmental protection. If we leave enough open space, he says, "wildlife will take care of itself. But we also have to preserve areas so more people can enjoy the Sound." He explains below.

"The Long Island Sound is one of the very fine embayments of the Atlantic Coast. Only the Chesepeake Bay surpasses it in size, but as an area of interest the Sound is more important, because there are more people here.

"As such the Sound offers us tremendous opportunities. It provides all the amenities of open space as a source of food, recreation and a diversity of environments. Its salt marshes are valuable as breeding grounds for finfish and shellfish, especially important if the Sound is to be maintained as a shell fishery.

"Much of this diversity is threatened. We've already lost 50 per cent of our marshes along the shore, developed because they were cheap compared to other land. After World War II heavy equipment made it feasible to dredge and fill marshes, and these areas became targets for development.

"But people need open areas too, and I want to stress the people aspect of preserving the Sound. The Sound is an important recreational resource. If we lose what's here the people in the area will have to travel 100 miles or more to find similar opportunities. And the people who will suffer the most will be the poor.

"Poor people are caught in an ecological trap. If you look at a map of the highest pollution zones you find that they coincide with the poorer districts. Affluent people who work in New York can commute to Greenwich but the poor are trapped in the environments we have abused. These are social as well as environmental problems and must be dealt with by higher political action.

"While poor people tend to live in zones of higher pollution it is also true that the less money you have the less likely you are to escape to different surroundings. And if you lose diversity near your metropolitan areas, you're impoverished a second time around.

"The problem is to explain this to people who have other needs at the moment. Jobs are fundamental, and we cannot solve the problems of the environment without solving the problems of unemployment and poverty. But we don't have to rip open the countryside to create jobs. We can put people to work reconstructing the cities.

"There are several practical ways in which we can change direction on the Sound. We are redirecting growth away from salt marshes with our tidal wetland laws. This program could be made more effective if the locals were given more of a hand in enforcing it. Most of the problems are local, since they involve what to do with a particular site. It might be worth reviewing the Coastal Wetlands Act, to give the locals more authority. If the state sets criteria, and special local agencies were set up to enforce them, I think that would be more effective.

"Local zoning has to be re-examined, to see if it encourages development to go in the right direction. Open space can be preserved by direct acquisition of land by the state. We also have to redirect building away from the waterfront. Nature does not stand still--the shoreline is in a state of flux. We have to be smart enough to leave the shoreline to nature. If not we will be defending buildings that did not belong there in the first place.

"We must also equalize public access. Not every foot of the shore needs to be opened, but each section of the shore should have some access areas.

"Any preservation program we undertake must also have the cooperation of New York City. It is estimated that about 500,000 miles of normal ecosystem are required to counterbalance the energy usage and waste of New York City. In other words, the city is parasitic on surrounding areas, including the Sound. New York in turn has been the victim of a heedless national policy that made the city a dumping ground for millions of displaced people. So restoring the Sound will also depend on what the nation does to help New York solve its problems.

"For too long the Sound and Coastal zone have been areas of cheap development for low priority uses. We now have to establish a better balance of public and private uses to preserve a resource that belongs to everybody and not just a few individuals."

DEP Citizens' Bulletin

Published monthly by the Department of Environmental Protection. Yearly subscription $2.00. 2nd class postage paid at Hartford, Connecticut. Please forward any address change immediately. Bulletin material may be reprinted without permission provided credit is given, unless otherwise noted. Address all communications to the Editor, DEP Citizens' Bulletin, Department of Environmental Protection, Room 112, State Office Building, Hartford, Connecticut 06115.

DEVELOPER: Robert N. Rich, President, the F.D. Rich Company, Stamford

photo: Fabian Bachrach

Though not directly involved in shoreline development, the F. D. Rich Company recently came to prominence as the firm responsible for the redevelopment of the entire downtown area of Stamford. Financed with $100 million of public money and $250 million of private the undertaking has, according to a recent article in the New York Times, "transformed what was a dull little city not unlike hundreds of other decaying New England mill towns into a spirited small metropolis of corporate headquarters, wealth, power and cultural activity."

As a major developer in the forefront of urban renewal, Mr. Rich has very definite ideas on what constitutes well-

(continued on next page)

planned shorefront development. He directed his comments to the Stamford area, with which he is most familiar.

"The tragedy with shorefront development around Stamford is that there has been no new residential construction to provide people with a selection of water-oriented housing. A good chunk of the land was taken up by industrial development that was there for the last 100 years, and redevelopment that took place was done primarily for single family dwellings. The Skippam Region, for example, was a vacant 125 acre tract until a few years ago. Then it was developed for single family dwellings. It could have been a gorgeous planned community--ideally a source of light industry coupled with varied forms of housing.

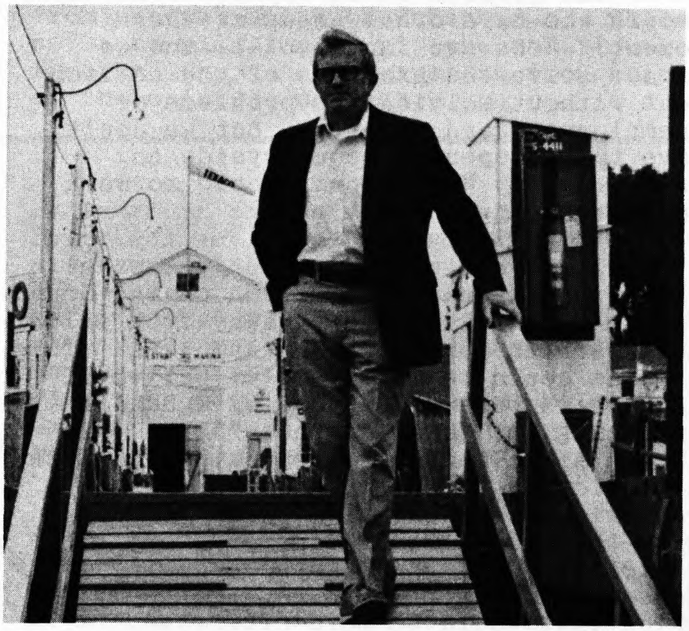
"The trouble is that we're stuck with things done in the industrial revolution when heavy industry was built along the shoreline. The south end of Stamford desperately needs renewal, much of that along the waterfront. There we have deteriorating industry mixed with deteriorating residential buildings, and these areas have to be renewed.

"An example of good redevelopment is what they did in Greenwich. There they had a waterfront that was industrial, and the town zoned to allow apartments to be let in. Little by little the industry left. Now the area is a mixture of corporate headquarters and multi-family housing. Although this development was piecemeal and not planned, it is an example of how a beautiful waterfront can be built.

"I have a bias about opening the shoreline to mixed residential dwellings. I'd like to see more people living along the shore in a choice of housing. All this can be done if development is balanced. Stamford and Bridgeport both have major parks on the water, and this means there can be denser forms of housing in nearby areas. There is a large market for denser housing instead of single units sitting on their own plots of land. This was indicated by the increase in multi-family housing construction before the recession.

"These forms of redevelopment need incentive, however. In some areas development has meant peeling off the waterfront for office parks or single family homes, since this was more lucrative. Development moves in the path of least resistance towards the higher profit. So what you need are government incentives to absorb the cost of undesirable development and encourage developers to go in other directions. And the source of this incentive has to come from the community."

MARINA OPERATOR: Richard Palmer, President of Stratford Marina



Water-based recreation is one of the important assets of any body of water. To many along the Sound it is an economic way of life.

Richard Palmer is Chairman of the Connecticut Marine Trades Association, an organization representing approximately 150 of the 250 marine dealers in the state. As a citizen with a vital interest in the Sound, he participated in the 1972-75 Citizens' Advisory Committee to the Long Island Sound Study and is now a member of the Citizens' Advisory Board to the Connecticut Coastal Area Management Program.

Palmer says that any coastal management program for Connecticut should have "sensible controls, in which the interests of the boaters get a fair share and the beauty of the Sound is maintained." More of his opinions are expressed below.

"The Long Island Sound is a unique and beautiful cruising area. Protected from the sea, the Connecticut side is particularly gifted with scenic inlets, including the mouths of the Connecticut and Housatonic Rivers. These areas need protection as well as increased facilities for boaters.

"From a business standpoint my interest is to serve the boating public. Part of this is aesthetic and part is in providing enough facilities for boaters to use. Boating should be both convenient and enjoyable--it shouldn't be a hassle going in and out of port, and waters must be protected to make boating enjoyable. There is an increasing need for marinas along most of our coast, especially near the mouths of the Connecticut and Housatonic Rivers, and towards the New York area of our coast. And while considering other forms of coastline development important, we also want to see that the boating public gets a fair share of the coastline use.

"As a boater I'm concerned that coastline development could go too far in any one direction. Commercial uses such as power plants, shipping and industry are important, but each of these carries with it pollution that could endanger the scenic attractions that support the boating industry. Controls on development and pollution are therefore essential to prevent the coastal area from being degraded any further and making it undesirable for boating.

"We might also go too far in the other direction. If things got to a point where it was decided that boating was harmful to the environment, well, that would put us out of business. Having a no-discharge law from boats in the Sound, for example would be such a case. Septic discharges from boats are prohibited from all inland waters in the state, but in the middle of the Sound you've got a completely different problem. Boaters' septic pollution there is like a drop of Vermouth in a bathtub full of gin. Absolute no-discharge laws there would be impractical and, in my opinion, would discourage boating.

"We've recognized the value of salt marshes but should take care to be reasonable about that issue as well. A recent University of Rhode Island study showed that marinas and salt marshes are compatible side-by-side, and I believe that some existing marinas could be expanded without endangering any salt marshes.

"All in all, boating is a very compatible activity. It can co-exist with commercial development if that development is controlled and, since boaters want to cruise in scenic areas, is compatible with protecting the environment. What we need now are some sensible controls. Otherwise we'll have a hodgepodge of laws with no one knowing what to do and none of the public being fairly served."

COASTAL TOWN OFFICIAL:
Barbara Maynard,
First Selectwoman, Old Saybrook

How do you maintain the attractiveness of a small coastal town? How do you deal with the pressures of development and tourism while maintaining an economic base for the people who live there?

Established in 1693, Old Saybrook is well-known for its historic and scenic qualities. The town is about two-thirds surrounded by water. Bordered on one side by Long Island Sound and another by the Connecticut River, it houses about 9,100 people year-round and from 15,000 to 19,000 in the summer. Ms. Maynard described some of the problems faced by a coastal town and how the community is solving them.

"Our town experienced a period of growth in the 1920's which was responsible for the major problem we've had to correct. Like many shore towns we were seen primarily as a summer community, with the object of getting as many people as possible living on the shore. Much of the beach area was laid out in small lots to accommodate as many cottages as possible for summer use.

"Now this was fine in the 1920's for six weeks of summer residence, but in subsequent years people became more mobile and it became more convenient to live year round in Old Saybrook and commute to the cities.

"With greater year round density on these small beachfront lots, sewage became a problem. There was no public

(continued on next page)

sewerage system and the increased volume of wastewater filtered through septic tanks into the thin, sandy soil of the low ground.

"To correct this problem we enacted very restrictive septic tank regulations and strict zoning to protect the beach front. The town has a full-time sanitarian who makes regular inspections. We're also investigating the possibility of having town-wide sewering. We have very strict residential zoning: summer cottages cannot exceed a certain square footage and they're limited in the percentage of the lot they can cover. We also do regular dye testing along the waterfront to test the integrity of people's septic tanks.

"I may be prejudiced, but I think that there are only advantages to being a coastal town. The Long Island Sound is a sailor's paradise--we have maybe 10 marinas in town. Our population nearly doubles in the summer but business has become attuned to it.

"We also have and encourage desirable forms of industry because this provides a good tax base. By desirable I mean industries such as electronics or printing which cause a minimum of pollution and can show that the probability of pollution is all but eliminated before they begin to operate. We have three industries located inland near the turnpike and they live very harmoniously with the community.

"A couple of years ago an oil company proposed setting up a refinery on Long Island Shoal. This would have ruined the view and create a lot of water traffic. Our town sent straight against the idea. We now have the Governor's word that the Shoals will never be leased without consent of the adjacent towns.

"There are several hundred acres of wetland in town and we very carefully protect them. I'm a conservationist and believe in preserving these areas, but also believe that there are significant and insignificant wetlands. If a piece has been owned for years and the owner is told he can't bend a blade of grass, well, I believe that is wrong. But I don't believe in desecrating important wetland areas.

"My biggest fear is that our town will become entrapped in the Northeast corridor--a spreading suburb from Washington to Boston with people elbow to elbow.

"People come to live here because they like the town the way it is. They like the history and the small town atmosphere of Old Saybrook. They want to retain it that way."

COMMERCIAL FISHERMEN:

Lastly, we bring you the divergent views of two commercial fishermen. We interviewed two lobstermen, located at opposite ends of the Sound. Like most fishermen, they were in agreement on one issue: support of the 200 mile limit. But they differed markedly on the issue of pollution and what must be done about it. Their comments follow.

Ernie Abbott, proprietor of Abbott's of Noank

photo: Robert Stern

Ernie Abbott runs a restaurant, fishing and canning business in Noank, near the Rhode Island border. Beginning as a part-time fisherman in 1942, he now has an operation with tanks large enough to support 18,000 lobsters. From 1972-75 he served as a commissioner of the Atlantic States Marine Fisheries' Commission.

Abbott is a man of unorthodox views. Organic discharge will actually improve offshore fishing, he says. He explains why below.

"I think they're all nuts with this crybaby stuff. There's more of everything in the natural habitat than when I went into business 34 years ago. We've got three times as many fishermen than we had then so the individual catch has gone down. The fish may have dropped somewhat from the fantastic amounts of fish we had, but there are plenty left.

"One thing we do have to do is establish the 200-mile limit. There are three and four hundred foreign vessels out there at a time. Often they're caught inside the twelve-mile limit. The Russian vessels really knock hell out of the breeding grounds. Wherever they go they destroy and deplete the resources. For us, the 200-mile limit would be a godsend.

"But I think that conservation has gone too far. Some of our best lobster

(continued after CAM insert)

Supplement to the DEP Citizens' Bulletin

volume 1
number 1
august 1976

LAND'S END

newsletter of the connecticut coastal area management program

CAM: Its Second Year

The Connecticut Coastal Area Management Program (CAM) is currently in the second year of a four year effort to develop a coordinated system for the management of Connecticut's coastal land and water resources.

Scheduled for completion by late fall of 1977, the program is structured into three overlapping phases: (1) data collection, (2) data analysis, and (3) formulation of management proposals. The data collection phase is designed to assemble basic information on the natural, social, and economic resources of the coastal area and on the existing state, local and federal activities which affect the use and development of these coastal resources. This data collection is due to be completed by late this summer.

During the data analysis phase, data will be evaluated and tentative conclusions will be drawn. This analysis is currently in progress and will continue throughout the fall.

Based on the conclusions of the preceeding work and with input from state, local, and federal officials and members of the general public, the actual formulation and selection of management proposals will begin this fall. The final proposals will be submitted to the legislature for approval during the next session which convenes in January, 1977. The objective is to determine what form of coastal management Connecticut will have by the end of the legislative session in mid-1977.

WHO IS PARTICIPATING?

The Coastal Area Management Program is funded by the State and the federal government under the federal Coastal Zone Management Act of 1972. It is administered by a small central staff in Connecticut's Department of Environmental Protection. Policy direction and advice are provided by the CAM Advisory Board. While some of the technical work for the development of the management program is done by the CAM staff, much of it has been contracted to other state, regional and federal agencies and private consultants. The state contractors include the Departments of Planning and Energy Policy Commerce, and Transportation. Contractors at the regional level include the six coastal regional planning agencies covering the South Western, Greater Bridgeport, Valley, South Central, Connecticut River Estuary, and Southeastern regions. At the federal level, the Soil Conservation Service is participating under contract, and the New England River Basins Commission is supplying background information and data that was developed for the Long Island Sound Regional Study. Private consultants include attorneys Russell L. Brenneman and Alan H. Kaufman and an aerial photographic firm.

Editor's Note: Although this is the first issue of LAND'S END, it is not written as an introduction to the Coastal Area Management Program but as a continuation of articles about the program which have appeared in the DEP Citizen's Bulletin and Connecticut newspapers. LAND'S END will be published quarterly and is available at no charge. If you wish to continue to receive it, or if you would like additional information about the program, please contact us.

EXAMPLES OF WORK SO FAR

Many tasks have been completed during the data collection and analysis phases of the CAM Program. A few examples of products prepared to date are:

Aerial Photographs - Black and white aerial photographs at scales of 1:12,000 and 1:1,200 and color infrared aerial photographs at a scale of 1:12,000 have been prepared for the coastal area. In addition, oblique 35mm slides have been taken of the entire Long Island Sound shoreline in Connecticut.

Soils Maps - Transparent overlay maps (to be superimposed on topographic maps) identifying different soil types have been produced at a scale of 1:24,000. These cover most of the land along the coast south of I-95 where detailed soils mapping has been completed by the Soil Conservation Service.

Resource Factor Maps - Overlay maps delineating specific resource factors have been prepared for the coastal area. Some of the factors mapped to date are tidal wetlands, shellfish areas, zoning, and sewer service areas. The maps have been done at a common scale of 1:24,000, using the U.S. Geological Survey 7.5 minute topographic maps as a base. The use of a common scale and base allow information to be directly compared for analytical purposes.

Management Boundary Options - Information has been collected on alternative boundaries to define the area to be included within the coordinated coastal management system. All alternatives define the border of the State with New York and Rhode Island as the seaward boundary of the Connecticut coastal area. The options considered to date for the landward boundary are: (1) a line measured 500 feet inland; (2) a line measured 1000 feet inland; (3) a line measured one mile inland (all measured from mean high tide or the inland boundary of tidal wetlands, whichever is further inland); (4) the inland boundary of the towns fronting salt water; (5) the continuous 250 foot elevation line extending the full length of the shoreline and up the estuaries only as far inland as salt water influence extends; (6) a boundary based on visual features of the coastal area such as the distance inland visible from a boat at a given distance offshore; (7) the first land transportation route running parallel to the shore; and (8) a multiple boundary using two or more of the above options. These and other possible boundary options will be discussed with the public during the series of workshops and public hearings to be held during the upcoming fall and winter months.

The Developer's Handbook - A handbook has been prepared which suggests environmentally sound development practices and procedures. The handbook summarizes the Department of Environmental Protection's regulatory programs and explains why they are necessary.

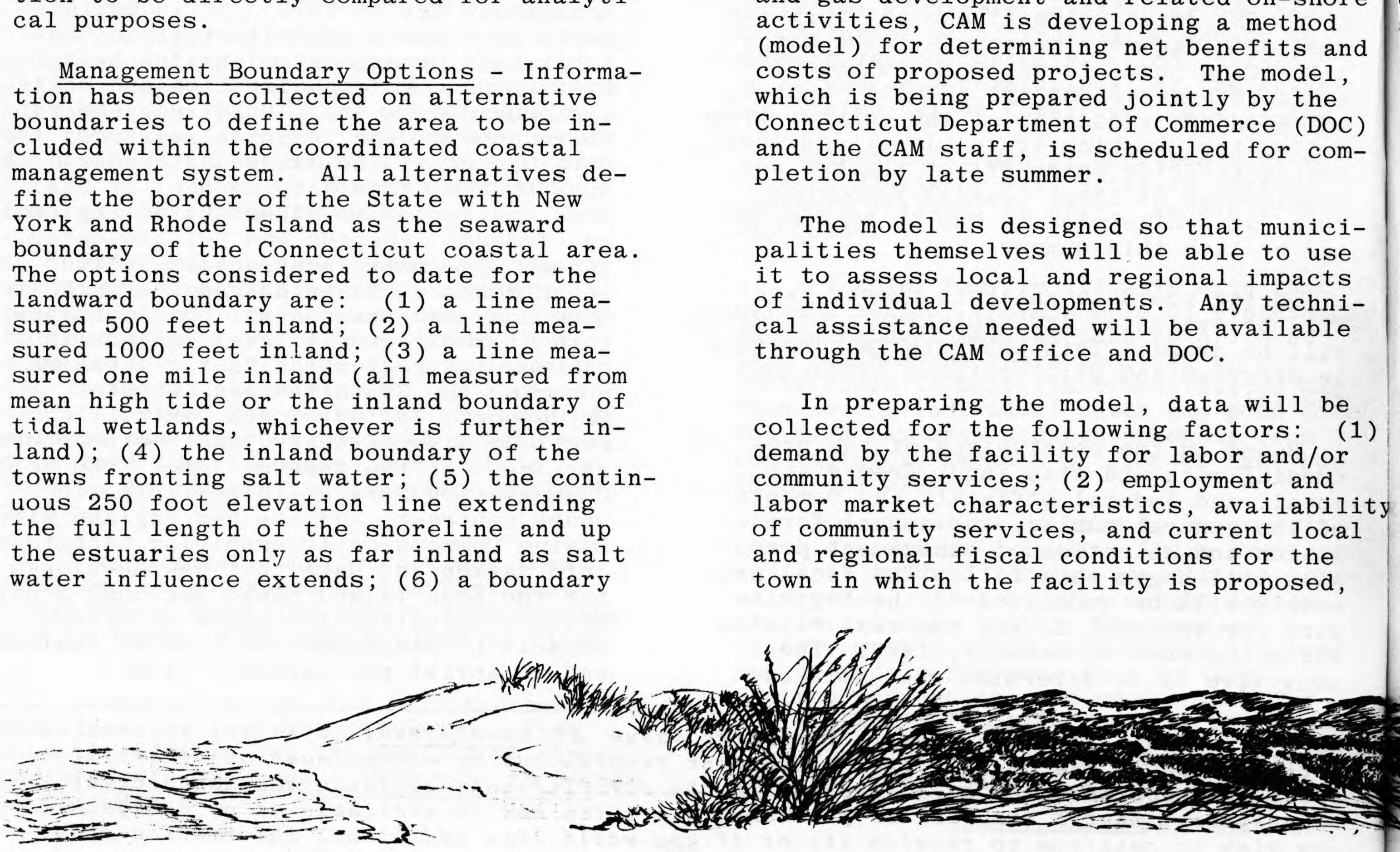
These and many other CAM work projects will provide an analytical basis for the development of management options and strategies later this fall.

Fiscal Impact Model

As an aid in determining the potential fiscal impacts on Connecticut of possible outer continental shelf (offshore) oil and gas development and related on-shore activities, CAM is developing a method (model) for determining net benefits and costs of proposed projects. The model, which is being prepared jointly by the Connecticut Department of Commerce (DOC) and the CAM staff, is scheduled for completion by late summer.

The model is designed so that municipalities themselves will be able to use it to assess local and regional impacts of individual developments. Any technical assistance needed will be available through the CAM office and DOC.

In preparing the model, data will be collected for the following factors: (1) demand by the facility for labor and/or community services; (2) employment and labor market characteristics, availability of community services, and current local and regional fiscal conditions for the town in which the facility is proposed,



Public Participation

The CAM Program is eager to involve citizens in the actual formation of the coastal management program. Lines of communication with the public are being established to keep citizens informed of CAM activities and coastal issues and to encourage expression of public opinion on the best options for a management program.

The staff is presently meeting with mayors or first selectmen and other local officials in the coastal towns in order to discuss CAM's objectives and its activities thus far. Most importantly, these meetings are a forum where officials can express their views to CAM staff regarding the most pressing coastal issues in their town and their preference on the relationship between the CAM Program and the town government.

A series of workshops, open to all interested members of the public, will be held in the coastal area late this fall. Their purpose will be to present information on coastal area management issues and obtain public reaction to specific management options. Those attending will be asked for their views on the submitted options. This winter, formal public hearings on the management program will be held. Dates for the workshops and public hearings will be announced in future issues of LAND'S END.

Future newsletters will notify readers of CAM's progress on specific issues as well as events of interest to citizens concerned with the coastal area. The staff is also available to speak to any interested group. If you would like a staff member to discuss the CAM Program with your organization and show a short film on coastal area management, please contact the CAM office.

(Continued from page 2)

and (3) revenues and costs both directly and indirectly attributable to the facility.

The model will be applied to a test proposal to assure its usability. In addition, general techniques for mitigating common adverse fiscal impacts will be suggested by DOC.

Advisory Board

The CAM Program receives policy direction from a Coastal Area Management Advisory Board composed of twenty-four people with diverse backgrounds and concerns. Meeting on the fourth Wednesday of every month, it acts as a sounding board on major issues and policy options during the program development phase. The Board has subcommittees on: coastal areas of particular concern, a coastal management boundary, permissable coastal uses, coastal legislation, Long Island Sound Study Proposal review, management system options, public information and citizen participation, and regional facility siting.

The Advisory Board, created at the beginning of the program, was originally composed of representatives from eight state agencies (with DEP as the chair) and the six coastal regional planning agencies. Last May, in an effort to more fully involve the public in program policy matters, the Board was expanded to include ten citizen members who were chosen to reflect a wide variety of social and economic interests. These interests include: business and industry, coastal recreation, marine fisheries, coastal property owners, conservation, environmental-ecological concern, urban minorities, and inland residents concerned with the coastal area.

The Board is currently chaired by a citizen member, Roland Clement of Norwalk, with citizen member John Rankin of Warrenville as vice-chairman.

Other citizen members are: Julie Belaga of Westport, John Daniels of New Haven, John Hibbard of Hebron, Stuart L. Johnston of Clinton, Gene F. Marra of Madison, J.Richards Nelson of Madison, Richard Palmer of Devon, and Sidney Van Zandt of Noank.

The public is welcome at all Advisory Board meetings. Call the CAM Office for time and location.

Urban Waterfront Studies

Various aspects of urban waterfront use are being investigated by the CAM Program. Two of these investigations are a port and harbor inventory being prepared under contract by the Connecticut Department of Commerce (DOC) and a study of waterfront reuse and redevelopment being undertaken jointly by the six coastal regional planning agencies (RPAs) and the central CAM staff.

The DOC port and harbor inventory will update and expand an older port study prepared by the U.S. Army Corps of Engineers in 1964. For all the major Connecticut ports and harbors, the study will inventory factors such as location, channel characteristics, storage and warehouse facilities, harbor services, transportation connections, and availability of drydocks and marine repair equipment, and will describe pending or proposed harbor improvements. The availability and characteristics of vacant harborfront property will also be examined.

The investigation of urban reuse and redevelopment by the coastal RPAs will review current redevelopment programs and projects along the coast, identify areas that are significantly under-utilized or are available for redevelopment, and suggest ways to better use the under-utilized or poorly utilized areas.

In conjunction with the RPA studies, the CAM staff is examining in detail innovative approaches to urban reuse and redevelopment which are being undertaken both in Connecticut and elsewhere in the country. The applicability of these programs for further use in the coastal area will be assessed.

All three studies are scheduled for completion late this summer. These studies will serve as basic input to the development of a coordinated strategy for the management of urbanized waterfront areas.

Review of Regulatory Programs

The CAM Program is reviewing and analyzing existing state and local regulatory programs as part of its effort to develop a coordinated system for managing Connecticut's coastal resources.

Each analysis will examine the structure, operation, and impact of the existing programs. Specific programs to be reviewed at the local level include zoning, subdivision, and inland wetlands regulation. Specific programs to be reviewed at the state level include regulation of tidal and inland wetlands, structures and dredging, and stream channel encroachment. The analyses will examine samples of permits issued and denied and attempt to determine the cumulative impact of the regulatory programs on coastal resources. The six coastal regional planning agencies are analyzing the local programs, while the CAM staff is analyzing the state programs.

The information gathered will be used to determine the best means of integrating the goals and activities of the existing regulatory programs and, if necessary, to determine ways of strengthening the programs in order to foster better use of Connecticut's coastal resources. Preliminary results of the analyses are expected by late summer.

CLEARWATER FESTIVAL

The Clearwater, a replica of the sloops which sailed the Hudson a century ago, now sails to focus public attention on pollution problems. A Clearwater festival will be held on September 11 and 12 in Norwalk. Displays on environmental concerns as well as craftsmen and folksingers will be included. For further information contact the Clearwater Club, 87 Cherry St., Meriden, CT. 06450

coastal
area
management
71 capitol avenue hartford, conn. 06115
566-7404

Financed under the Coastal Zone Management Act of 1972.

catches are in polluted waters. We have excellent catches off New Haven, where they discharge raw sewage. Some of the best bluefish and striped bass fishing is off Hell's Gate, New York. And that's some of the filthiest, most polluted water in the world.

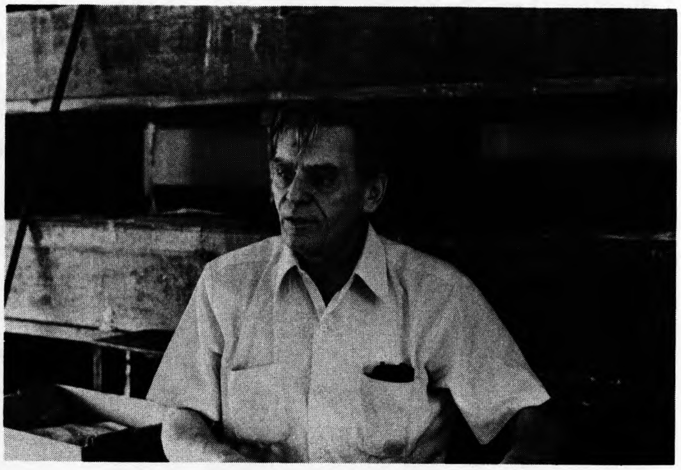
"I'm no marine biologist, but these are my opinions. I think organic discharge is a way of returning the nutrients we take out of the sea. For that reason I supported the Pfizer Drug Company when they were discharging mycelium [an organic drug runoff] into the Sound. I was the only fisherman on the east coast to support them. They stopped that discharge four years ago and now we're having our worst lobstering in 22 years.

"Chemical runoff is a different situation. Plastics and chemicals will hurt the fishing. There's no reason to have allowed chemicals to go into our streams and rivers for all these years. This should be stopped.

"Another problem is energy and fuel. People don't want oil drilling but they bitch like hell when there's no gasoline. But you know something? If they put 40 oil rigs in the North Atlantic it would be the greatest conservation measure you could do. Nobody would be able to make fishing tows among the rigs. The structures would provide excellent habitat.

"What I really think we need, then, is the 200-mile limit and stricter control of inshore fishermen. Most of them are sincere but some are fooling with short lobsters. If lobsters are taken too short they won't have time to reproduce. This is one area where the federal and state governments could both work to enforce a minimum legal limit. This has to be done to preserve the fisheries."

Art Michaud, owner of Stratford Shellfish



Raised in a Maine fishing village of 95 people, Art Michaud has been in the fish business all his life. "We used to take 15 to 20,000 pounds of lobster a week and shipped them as far as Las Vegas and Europe," he says. Six years ago he came to Connecticut, bought a closed-down hot dog stand and set up the Stratford Shellfish Company with his brother.

Michaud disagrees with Abbott on the issue of organic pollution. "We're killing ourselves with our own pollution," he says. Stressing the importance of the sea as a resource, he advocates strict control over waste disposal and used water runoff.

"The sea as a resource is second to none. More and more people are finding that their consumption of seafood is rising. Where else do they get the iodine they need? The coast from Bucks Harbor, Maine to Key West, Florida is loaded with food and could provide jobs for millions of people. We should do like the Canadians--they loan out money for the boats and fishing equipment and the fishermen turn in 10% of the crop. We should do that instead of putting people on relief.

"The sea is very much underused for its resources and abused by us and foreign nations. The Russian factory boats fish without regard for size and kill a lot of small fish and seaweed in their hauls.

"We're polluting the water ourselves. The western part of the Long Island Sound is very polluted. We used to catch lobsters there by the ton. Now there are almost none. You can't pick up clams and eat them anymore, either. The pollution is very bad and nobody's doing anything about it.

"The problem is our modern ways--if we continue them we'll kill ourselves. My mother used to hand wash a tub of clothes with half the soap and water they use now. How many tons of chemical and soap are needlessly dumped into the water?

"You see the dumps all along the shore. Tons of garbage are rotting behind New York city and on the Connecticut shore. All we do with our garbage is bury it. Where do they think all that juice goes--to hell?

"What Connecticut needs is a program to make people understand the effect they're having on the water; to make all the people who use the sea policemen after themselves. If we do it here and are successful others will follow. We're at the point now of swim or drown. Not for me, maybe, but for my grandchildren."

from the field

by Douglas Starr

Aboard the Ellen J.

You'd see her if you worked the oyster beds. She'd be drifting slowly as her crew, hauling in the dredge, dumped its contents on board and sifted through the heap. You'd see her stubby silhouette, ungainly with the dredging crane, a mass of oyster shells piled on deck.

She is the Ellen J., the 42-foot oyster boat owned by the State of Connecticut. Built in 1904, she is employed by the Department of Agriculture Aquaculture Division to help restore the naturally growing oyster beds to our coast.

Oystering used to be a profitable industry for the men who fished the public beds. Owned by the state, these areas are open to anyone with an oystering permit from the Department of Agriculture. The other large oyster areas are leased by private oyster companies and are reserved for their use only.

In 1949 a severe storm scoured the bottom of the Sound, ruining most of the areas of natural growth. Dr. Peter Pellegrino, professor of biology at Southern Connecticut State College and a member of the Ellen J.'s crew, explains:

"For the first two weeks of life oysters are planktonic larvae, free to swim around. Later they move to the bottom and grow shells. To do this they need a clean, hard surface on which to attach, or set. The best surface for this setting is on other oyster shells.

"The storm in 1949 washed away most of these shells, eliminating some valuable growing areas. So part of our restoration program is to rebuild the supply of oyster shells in the original growing areas. Another part is to drag the bottom with a rig to turn the shells and expose the portions that are clean."

Pellegrino has been working on the Ellen J. about three times a week for the past three years, studying the oysters' size, populations, and predators, and surveying the beds. The survey, he says, "has never been done before and would be impossible without the cooperation of the state. The state provides the boat and dredge. We provide the ecological equipment and students to help with the studies."

The captain of the Ellen J. is George Chase, an oysterman for many years.

"My father and grandfather before me were oystermen," he says. My mother didn't want me working on the water but I guess it's in my blood. I've been oystering part-time or full-time for most of my life."

Chase is 69 and looks like a man in his fifties.

We set out from Bridgeport Harbor at 8:30 a.m. A thin drizzle fell, threatening to become rain. Windless, the water was like glass. We were to make 20 stops along the beds from Bridgeport to Stratford.

"There are about 12,000 acres of natural beds along our 260 miles of coast," Chase noted, "and we have one boat whose job it is to restore them. Before we bought this boat there was nothing. Nobody managed the beds.

"These beds are public. Who'd pay to maintain them when they know that anyone could come and fish?"

Three years ago the Aquaculture Division, under the supervision of John Baker, bought the Ellen J., marking the beginning of the state/college effort to restore and maintain the natural beds.

Leaving the harbor, we chugged to an area chosen as a sampling site. From the pilot house Chase released the winch to drop the dredge. After a two-minute pull he hauled it up, full and dripping, then dumped the load on deck.

(continued on page 14)

Members of the Ellen J. crew maneuver the dredge for another haul.

Department of Planning and Energy Policy:

P.E.P. TALK

by Tom Richard Strumolo

I read in a Louisiana energy newsletter last year that resistance by New England states to offshore petroleum or natural gas development or to the building of refineries here was another sign that "The Yankees, having won the War of Independence for us all, have been resting on their laurels ever since." The point should be well taken that we in Connecticut cannot expect other states to bear the burdens of energy development while we, content to use the product, keep our environment perfectly intact and aesthetically pleasing.

To look at the question of Atlantic offshore development from an energy perspective is ultimately to examine Connecticut's natural gas future. Whether petroleum is found in large quantities or not in the Georges Bank matters less to us than if natural gas is found.

The basic advantage of having energy supplies nearby is that of lowering transportation costs. And while the cost of transporting oil is insignificant compared to its world price, that of transporting natural gas is critical. Connecticut is at the very end of existing gas pipelines from the producing states in the West and Southwest. The pipeline charges over this distance result in our paying the highest price for natural gas in the country.

So if oil were found near Connecticut say, in the Atlantic Outer Continental Shelf (OCS), it will not be significantly less than the imported or domestic supply. But if natural gas were found the lower transportation costs would mean substantially reduced bills.

The importance of developing Atlantic OCS natural gas is increased because of projected shortfalls in Connecticut's supply. The Connecticut Energy Advisory Board's 1976 Annual Report projects 25% less natural gas supply than demand by 1985 and a 60% shortfall by 1995. These imbalances will mean further contracts for the extremely expensive substitutes, Synthetic Natural Gas (SNG) and Liquefied Petroleum Gas (LPG). Clearly, gas found off the New England coast would be invaluable, economically and energy-wise.

Any development of offshore or onshore energy deposits must be carefully planned. Responsible development includes assessment of all onshore impacts--environmental, employment-related and those affecting rapid growth. Responsible development also means a true sharing of responsibility associated with the exploration, development and processing of the energy source; a partnership between state and federal government as well as cooperation between these and the oil companies. And finally, responsible development must include a plan to direct a fair share of the revenues earned back to the states from which the energy resource is taken.

Careful, well-planned development of the Atlantic Outer Continental Shelf will guarantee maximum economic and energy supply benefits and minimum environmental impact, impact endemic in drilling for, processing, and transporting natural gas and petroleum.

---

facts

(cont'd. from p. 3)

use of the coastal resources. Mandated by the federal Coastal Zone Management Act of 1972, the program will establish a partnership among local, state and federal governments to make sure their efforts to improve the coast do not overlap or conflict. The program will make use of existing laws and, if necessary, work toward new legislation to improve the coast's important environmental, social and economic resources.

The emphasis of the program is management. Rather than undertake a repetitive study of coastal problems, the CAM program will work towards making governmental actions in the coastal area more responsive to the needs of its citizens. Federal approval of this program will qualify the state for unlimited years of management money, possibly one to one and a half million dollars annually. This "management money" will be shared between the state and the local communities.

Conservation Commission Corner

Connecticut Association
of Conservation Commissions

Restoring Fairfield's Marsh

Fairfield's Conservation Director writes about a first-in-the-nation marsh restoration effort.

by Thomas J. Steinke
Fairfield Conservation Director

STATUS

For the last three centuries Fairfielders have been living in relative harmony with the sea. In the past, periodic storms flooded the salt marshes and the surrounding uplands; storm waves alternately removed and replaced the end of the Pine Creek barrier beach; the occasional hurricane flooded Town center and inundated Fairfield's entire coastal plain. During this time, Fairfield's salt marshes continued to produce food and forage, some mosquitoes and a great abundance of crabs, clams, fish, wildlife and waterfowl.

Intermittent tidal and storm flooding of low-lying shore homes had always been a common occurrence in Fairfield. But the extensive flood damage in 1938 and 1950 resulted in the Town's adoption of an extensive Town-wide diking program. In Pine Creek alone, of nearly 300 acres of viable salt marsh present in 1950, the diking effort isolated all but 78 acres by 1956, and all but 17 acres by 1968.

While virtually eliminating all danger of tidal flooding (but not hurricane flooding), the newly installed dikes created many unforeseen adverse effects as well. The dikes effectively eliminated all tidal action in the isolated marshes and severely reduced tidal scour in the undiked portions of Pine Creek. This elimination of tidal scour and salt water flushing resulted in the silting-in of ditches and creek channels, and the subsequent flooding of low-lying neighborhoods due to storm water runoff in obstructed drainage ways.

The lack of tidal action also eliminated the low-growing salt marsh grasses, all shellfish, finfish and most wildlife. The grasses were replaced by the fast growing, fast burning tall reed, phragmites. Fairfield has approximately 300 acres of diked phragmites marsh and expends nearly $30,000.00 annually on fire equipment mobilization and manpower fire suppression costs on these 300 acres alone.

As the mosquito drainage ditches silt in they are further obstructed by phragmites stems which aggravate our mosquito problems. In fact, within the diked marshes, Fairfield has better mosquito breeding conditions today than before the drainage ditches were dug in the first quarter of this century.

By eliminating tidal flushing in low, flat stretches of marsh buffer areas, the dikes did in fact reduce intermittent tidal flooding. However, by encouraging increased development behind them, the dikes have served to increase the potential damage from hurricanes.

RESTORATION ACTIVITIES

In 1965 the Conservation Commission, Town Plan and Zoning Commission and First Selectman first met to discuss salt marsh restoration. To date the Town has purchased over 130 acres of marshland and in 1970, retained two graduate students from the Yale School of Forestry to devise a general marsh management plan.

The primary objective of the Town's proposal is to restore the natural form and functions of the Pine Creek Estuary while preserving the flood-prevention functions of the cross-channel dikes. This will be accomplished through the following activities:

A. Removing and relocating the cross-channel dikes to the periphery of the marsh. This operation will allow water once again to pour into the marsh. Replacing the dikes along the marsh's periphery will allow us to keep our upland, developed areas dry and the marshes wet.

(continued on next page)

Trailside Botanizing

by G. Winston Carter

SALTSPRAY ROSE
(Rosa rugosa)

Rosa rugosa is one of the very interesting species of the many types of wild rose. The saltspray rose has heavily wrinkled leaves and has very short bristly stems. It often grows in dense clumps and up to 6 feet in height. The typical single flower of the wild rose is very attractive. It is deep red or sometimes white. The blossom is often up to 4 inches in diameter.

One special feature of this rose is that it does very well in a seashore environment. It thrives on fog and the sea spray and helps to hold the dunes together. It is one of the first plants to attract one's attention when visiting the shore.

This species of rose may have been introduced from the Orient as the result of a shipwreck off Cape Cod in 1849. It is believed that the plant was present in the cargo and that when crates of it were washed ashore it took root by itself. From there it has apparently spread in many directions--west to Minnesota and the Great Lakes area, north to Quebec, and south along the sea coast to New Jersey.

Roses in general have aroused the interest of poets and artists since early history. This is probably due to their great beauty and fragrance. It is less well known that they are highly regarded for their food value. A useful part of Rosa rugosa in particular is its bright scarlet plum-sized fruit which ripens in the fall. Commonly referred to as the rose "hip," it is good eaten raw, boiled to make a tea or made into a jelly, and is very high in vitamin C.

The plant's generic name is derived from the Latin "rosa" and the Greek "rhodon." In early mythology the rose was the symbol of love and beauty. The species name "rugosa" is from the Latin and describes its wrinkled leaves.

marsh

(cont'd. from p. 12)

B. Installing self-regulating tide gates in existing and proposed dikes. Never used before, these gates will allow tide waters to enter the marsh but will automatically close if the waters approach flood levels.

C. Dredging the uppermost marsh areas as combination fresh water marshes and storm water detention areas. This step will restore natural mixing of fresh and salt water to re-establish important breeding grounds for marine life. By dredging a series of storm water detention basins, the Town will provide upland flood water storage during floods caused by heavy rains and high tides.

D. Creating dredge spoil islands in an existing 11 acre pond. From the 1940's to 60's Fairfield took much of the gravel it needed from gravel beds behind the dikes in the tidal marsh. The holes left from this operation were later filled with garbage.

Disposing of garbage in this manner has been abandoned as an unhealthy practice, and we are now left with one 11 acre lagoon created from the gravel operations. We propose to create islands in this area as a means of disposing of

PROJECT PHASES

We plan to complete the project in five phases. Phase I seeks to restore about 70 acres of state-regulated tidal wetlands by rediking around 35 acres of dying marsh and restoring tidal action to an additional 35 acres with self-regulating tide gates. The entire effort will take place on land owned by the Town of Fairfield.

(continued on next page)

marsh

(cont'd. from p. 13)

Phases II through V will involve both the use of self-regulating tide gates and removal of the cross-channel dikes from the marsh and replacing them with dikes connecting areas of high ground around the marsh's periphery. Upon completion, this five-phase program is expected to renew about 220 acres of marsh at a cost of $480,000.00.

photo: Tom Steinke

A denizen of Fairfield's tidal marsh.

Similar programs are planned for the Turney Creek and Ash Creek Estuaries representing an additional 90 acres of marshland. The total project, including restoration of all three estuaries, should cost about $600,000.00

The Pine Creek restoration proposal has been to public hearing in Fairfield by the Wetlands Agency after all adjacent property owners were notified. The only adverse comment we received was a note of concern that the leachate draining out of the dump would pollute restored marsh waters. Unfortunately this dump leachate will be around for decades. Restoration of tidal action in the marsh will dilute it, however, and should enhance the water quality within the marsh.

One disappointment we have encountered is a lack of success in getting state or federal funding to quantitatively document our restoration effort. The data generated by this project could have applications in similar marsh systems in Connecticut and throughout the United States. We plan to continue our efforts to document the program throughout all phases of marsh restoration.

field

(cont'd. from p. 10)

Pellegrino and the crew immediately started sifting through the catch. "Diapatra," he announced, calling out the name of a marine form he found. Bill Ackerman, a graduate student at SCSC, recorded it on a pad. The men sorted through the pile, separating live oysters from shells and debris. A flatfish flipped out of the pile and was tossed overboard. Crabs that scuttled out were thrown over as well.

Soon the load was divided into piles of live oysters and oyster shells. Pellegrino counted the live oysters and measured each one, calling out the numbers for Ackerman to record. These were thrown back. Shells were kept on board, later to be dumped in an area deficient in setting material, or "cultch."

There was another pile left at the end of the sorting. A dozen starfish had been removed and were pushed to the bow to dry out.

"Starfish are the oysterman's enemy," Chase explained. "They're the worst predators of oysters. The big companies send out special starboats that drag mops over the beds to pull up the starfish. Sometimes they spread quicklime over the beds, which kills the starfish but not the oysters."

"Starfish are an ecological dead end," Pellegrino added. "All the energy that goes into them is trapped there. They have no natural predators."

We stopped at several more sites on our way to the Housatonic. Nearing the river, we noted an increase in the number of live oysters we caught. Pellegrino explained that oyster larvae set best in the warm waters of the estuary. Also, the river's low salinity is unsuitable for starfish.

We turned around in the estuary and passed an oysterman hand-hauling a dredge over the side of his 25-foot scow.

"These young guys are really O.K.," Chase said. "Some have had oystering in the family for generations. The more people we have working the beds the better it will be maintained. Maybe that will bring the industry back."

We took a few more dredges on the way back to Bridgeport. Outside the harbor the pumps were turned on and the oyster shells hosed overboard. Perhaps they would provide a good set for a crop of young oysters next year. We turned towards port.

Captain Chase grew pensive as we headed across the quiet water.

"Year after year I keep hoping for more people to have the bonanza I had when I was younger," he said. "We've got to do something. I really want to bring this stuff back."

DEP Calendar

Public Hearings
August ,1976

Water Compliance

August 19, 1976 - 10:00 a.m.
122 Washington St.
Hartford, Conn.

Purpose: To request a permit to discharge 528 gallons per day of treated metal finishing wastewater to the Naugatuck River and 144 gallons per day of cleaning wastewater to the Torrington sanitary sewage system.

Custom Plating and Buffing
Torrington, Conn.

August 19, 1976 - 11:00 a.m.
122 Washington St. - Room 1
Hartford, Conn.

Purpose: To request a permit to discharge 10,000 gallons per day of effluent to the groundwaters of the Town of Ellington.

Paul Panebianco
Ellington, Conn.

Water Resources

August 17, 1976 - 10:00 a.m.
State Office Building - Room 221
165 Capitol Ave.
Hartford, Conn.

Purpose: To request a permit to conduct a regulated activity in a tidal wetland.

Mr. Archangelo
North Haven, Conn.

August 19, 1976 - 10:00 a.m.
State Office Building - Room 221
165 Capitol Ave.
Hartford, Conn.

Purpose: To request a permit to conduct a regulated activity in a wetland.

Howard Allen
Milford, Conn.

August 26, 1976 - 10:00 a.m.
State Office Building - Room 221
165 Capitol Ave.
Hartford, Conn.

Purpose: To install steel bulkhead in the Thames River

Malcolm Browne
Groton, Conn.

Permits Issued
May, 1976

Air Compliance

May 20 - Conditional Permit
GTE Sylvania, Inc.
Permit to operate a combustion unit

May 20
American Cyanamid Co.
Permit to operate two existing polyester reactors

May 20
Rowland, Inc.
Permit to construct and operate manufacturing equipment and a boiler

May 20
Connecticut Printers, Inc.
Permit to construct three printing presses with afterburners

May 20
Charles Batchelder Co.
Permit to construct an aluminum scrap crusher and an aluminum scrap dryer

May 26
E. F. Houghton & Co.
Permit to construct and operate a steam boiler and five chemical blenders

May 26
Yale Steel Corp.
Permit co construct and operate five furnaces

May 26
Enfield Public Works Dept.
Permit to construct and operate a waste gas flare

May 26
American Cyanamid Co.
Permit to construct and operate a 50,000 gallon storage tank for methyl formcel

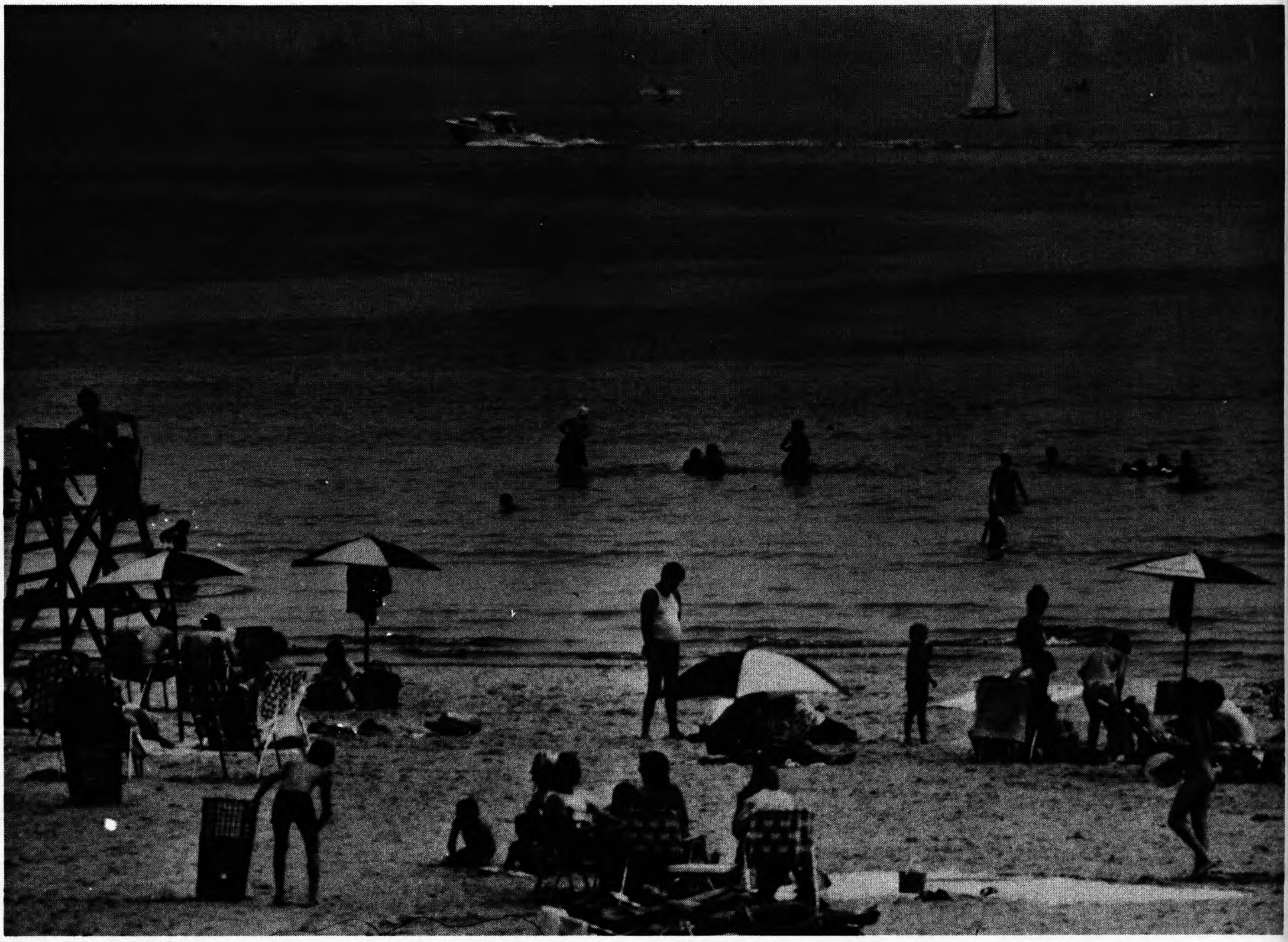
May 27 - Conditional Permit
The Stanley Works
Permit to operate a modified lithographing line

Water Compliance

May 25
Scott Oldsmobile, Inc.
Permit to discharge treated sewerage and automobile waste water

* * *

Because of space limitations in this special issue, permits issued and denied during June, July and August will appear in the September Bulletin.



DEP citizens' bulletin

State of Connecticut
Department of Environmental Protection
State Office Building
Hartford, Connecticut 06115

Commissioner: Joseph N. Gill
Director, Info & Ed: Greg Sharp
Editor: Douglas Starr
Illustrator: Deborah Dumin

Phone: 566-5524

Photo Credits

front cover: Hammonasset Beach by Dick Clifford, DEP Parks & Recreation

back cover: Connecticut beach scene by Ingbert Gruttner, courtesy of New England Regional Commission

inside photos by Douglas Starr unless otherwise noted.

SECOND CLASS POSTAGE PAID
AT HARTFORD, CONNECTICUT.